

REMARKS

In an Office Action mailed March 7, 2001, claims 1-13 were rejected under 35 U.S.C. 102(e) as being anticipated by Bowers et al. (U.S. Patent 5,985,687). In order to anticipate a claim, the prior art reference must disclose exactly the elements of the anticipated claim. See Titanium Metals Corp v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) Applicant respectfully submits that Bowers is insufficient to provide a prima facie case of anticipation or even obviousness with respect to dependent claims 3, 4, 5, 8,12 and independent claim13 because Bowers fails to describe several limitations in the rejected claims as explained below.

Bowers fails to describe or suggest the use of a metal interlayer between the semiconductor membrane and the thermally conducting substrate, much less a solder material as described in claim 3. Claim 4 enumerates the types of solder materials. Applicant has amended independent claims 1 and 9 to claim the metal interlayer between the conducting substrate and the semiconductor material and thus respectfully submits that claims 1 and 9 are patentable over the cited prior art reference.

Applicant also submits that Bowers is insufficient to create a prima facie case of obviousness with respect to dependent claims 5 and 8. Although Bowers describes the formation of a laser, Bowers does not describe exposing the substrate to a laser to remove the insulating substrate as described in claim 5. Bowers teaches Silicon doping, but not using conducting substrate made from silicon as described in claim 8. Bowers also does not describe cleaving the thermally conducting substrate along a {1, 1, 1} plane as described in claim 12. The Office Action does not provide a citation in the Bowers reference to support the rejection of claim 12. Applicant believes that in the InPh example provided in Bowers, the cleave would not occur along a {1, 1, 1} plane.

Applicant also respectfully submits that Bowers is insufficient to present a prima facie case of anticipation or obviousness with respect to claim 13 because Bowers does not disclose placing a metal layer on the first side of the semiconductor membrane. The Office Action cites material described in Col. 7, lines 40-50 of Bowers. Although Col. 7, lines 40-50 of Bowers describes making metal contacts on the InGaAs layer, the cited sections do not describe placing a metal layer on the first side of a semiconductor membrane having the characteristics listed in claim 13. Claim 13 also recites etching a trench through the metal layer which is not described in Bowers.

In view of the preceding amendments and remarks, Applicant respectfully submits that independent claims 1, 9 and 13 are allowable over the cited prior art reference. All remaining claims depend on independent claims 1, 9 and 13 and are thus also believed to be allowable over the cited prior art reference. Additional reasons for patentability have also been provided. Applicant thus believes that all pending claims are in condition for allowance. Allowance at Examiner's earliest convenience is respectfully requested.

Respectfully submitted,



Kent M. Chen
Attorney for Applicant(s)
Registration No. 39,630
(310) 333-3663